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01/20/2004

Scott L. Smith

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03/27/2008

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EXAMINER

BRINEY III, WALTER F

ART UNIT

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SCOTT L. SMITH and STEVEN M. ROBINSON

Appeal 2007-3185
Application 10/760,996
Technology Center 2600

Decided: March 25, 2008

Before ANITA PELLMAN GROSS, MAHSHID D. SAADAT, and SCOTT R.
BOALICK, *Administrative Patent Judges*.

GROSS, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Smith and Robinson (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 15 through 18, 21 through 24, and 27 through 29, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants' invention relates to a method for supplying electrical power to plural pieces of telecommunication equipment by respective telecommunication wireline segments that derive their power from a

common power source. The method prevents a ground fault on one wireline segment from causing misoperation of the other wireline segments in the system. Claim 15 is illustrative of the claimed invention, and it reads as follows:

15. A method of delivering span power by way of a plurality of telecommunication wireline segments to respective ones of a plurality of remote telecommunication terminals, said method comprising the steps of:

(a) coupling said plurality of telecommunication wireline segments to a span power bus, so that span power is coupled from said span power bus to said plurality of telecommunication wireline segments;

(b) coupling respective ones of said plurality of telecommunication wireline segments to respective ones of said plurality of remote telecommunication terminals, so that said span power is delivered by said plurality of telecommunication wireline segments to said respective ones of said plurality of remote telecommunication terminals;

(c) coupling respective ones of said plurality of telecommunication wireline segments to respective ones of a plurality of ground fault detection and isolation circuits, a respective ground fault being capable of causing electrical current in excess of normal load current to flow in a remote telecommunication terminal that is connected to the respective telecommunication wireline segment in which the ground fault has occurred, and causing a reduction in said span power to a level that prevents proper operation of a remote telecommunication terminal that is coupled to a telecommunication wireline segment in which no ground fault has occurred;

(d) causing said ground fault detection and isolation circuits to monitor said plurality of telecommunication wireline segments for the occurrence of a ground fault therein; and

(e) in response to a ground fault detection and isolation circuit detecting, in step (d), the occurrence of a ground fault in an associated telecommunication wireline segment to which said ground fault detection and isolation circuit is coupled, causing said ground fault detection and

isolation circuit to decouple and isolate said associated telecommunication wireline segment from said span power bus, so as to prevent said reduction in said span power being delivered by others of said plurality of telecommunication wireline segments, in which no ground fault has been detected as having occurred, to remote telecommunication terminals coupled thereto, thereby preventing misoperation of said remote telecommunication terminals coupled to said others of said plurality of telecommunication wireline segments, wherein

step (d) comprises the steps of:

(d1) at said ground fault detection and isolation circuit, measuring a first parameter representative of current flowing in a first segment portion of said associated telecommunication wireline segment to said remote telecommunication terminal, and measuring a second parameter representative of current flowing in a second segment portion of said associated telecommunication wireline segment from said remote telecommunication terminal, and

(d2) at said ground fault detection and isolation circuit, in response a difference in said first and second parameters, providing an output representative of the occurrence of a ground fault in said associated telecommunication wireline segment, and wherein

step (e) comprises causing said ground fault detection and isolation circuit to decouple, and thereby isolate, said associated telecommunication wireline segment from said span power bus, in response to step (d1) providing said output representative of the occurrence of a ground fault in said associated telecommunication wireline segment.

The prior art reference of record relied upon by the Examiner in rejecting the appealed claims is:

Takeshita

US 4,385,336

May 24, 1983

Claims 15 through 18, 21 through 24, and 27 through 29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Figure 1 and paragraphs [02] and [03] of Appellants' Specification in view of Takeshita.

We refer to the Examiner's Answer (mailed November 15, 2006) and to Appellants' Brief (filed September 15, 2006) and Reply Brief (filed January 12, 2007) for the respective arguments.

SUMMARY OF DECISION

As a consequence of our review, we will reverse the obviousness rejection of claims 15 through 18, 21 through 24, and 27 through 29.

OPINION

The Examiner asserts (Ans. 4) that paragraph [03] of Appellants' Specification is admitted prior art. Specifically, the Examiner asserts that Appellants' admitted prior art includes the recognition that in a span-powered system with multiple remote units, each coupled to different pair of telephone wires, a ground fault in one wire causes malfunction on all of the connected pairs of telephone lines is prior art. The Examiner asserts (Ans. 4) that the only limitations not taught by Appellants' admitted prior art are the coupling of a ground fault detection and isolation circuit to each wireline segment in the system and isolating the ground fault from the rest of the system. The Examiner relies on Takeshita for the remaining limitations.

Appellants contend (App. Br. 20-21) that the effect of a ground fault on other wireline segments, as discussed in paragraph [03] of the Specification, is not admitted prior art. Further, Appellants contend (App. Br. 22-26) that Takeshita fails to disclose a ground fault detection and

isolation circuit for isolating the wireline with a ground fault from the rest of the system, as recited in each of the independent claims. The issues before us, therefore, are whether paragraph [03] of the Specification is admitted prior art, and whether the combination of paragraph [03] of the Specification and Takeshita teaches or suggests connecting a ground fault detection and isolation circuit to each wireline for isolating a wireline with a ground fault from the rest of the system.

First, as to paragraph [03] of the Specification, the use of the word "often" in the first sentence suggests that a system with multiple transceiver units with a common shared electrical power source may be admitted prior art. However, we find no language to indicate that the problem described, of a ground fault in one wireline adversely affecting the rest of the system, was known other than to Appellants.

Second, since Takeshita is directed to a single wireline, Takeshita fails to recognize, let alone solve, the problem solved by Appellants. In addition, Takeshita discloses (col. 3, ll. 44-52) that when a ground fault is detected, the power and current thereto is *decreased*. Then, when the current difference is reduced to less than a predetermined threshold value, the detection circuit will no longer detect a ground fault. *See* col. 3, ll. 59-63. In other words, the wireline is never decoupled and isolated, but remains connected so that it may be functional again when the ground fault is no longer detected. We note that the Examiner takes the position (Ans. 4) that reduction of current equates to isolation, but we find this interpretation to be unreasonable. Specifically, decoupling and isolating requires more than a mere reduction in current; it requires the wireline to be cut off completely. In addition, since neither paragraph [03] of Appellants' Specification nor

Takeshita recognizes the problem of a ground fault in one line adversely affecting the rest of the lines in the system, we find no motivation for further reducing the current to zero such that a wireline with a ground fault is decoupled and isolated from the system. Therefore, the Examiner has failed to establish a prima facie case of obviousness for all of claims 15 through 18, 21 through 24, and 27 through 29, and we cannot sustain the rejection.

ORDER

The decision of the Examiner rejecting claims 15 through 18, 21 through 24, and 27 through 29 under 35 U.S.C. § 103 is reversed.

REVERSED

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